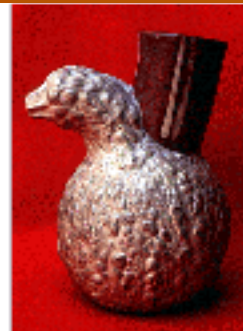




## Ethnobotanical Leaflets



## The Natural History of Mahogany

By Scott Herron

*Swietenia macrophylla* and *S. humilis* are referred to as Mahogany, a tropical evergreen or deciduous tree that can attain heights of 150 feet. Mahogany is a member of the Meliaceae, which includes other trees with notable wood for cabinet making. *Swietenia macrophylla* is world renowned for its beautifully grained, hard, red-brown wood. It has been harvested since 1500 A.D. for its wood, with large branches being in higher demand than the trunk. This is due to the closeness of the grain in the branch's wood. Mahogany is used for furniture, fixtures, musical instruments, millwork, cars, ships, boats, caskets, airplanes, foundry patterns, veneer, and plywood (Hill, 1952).

In Costa Rica, the only population of Mahogany exists in the Guanacaste-Puntarenas region where the tropical dry forests occur. Both of the species' ranges overlap in this region, with Bigleaf Mahogany, *S. macrophylla*, extending from the Bolivian Amazon up the Atlantic and Gulf Coast to Mexico, while Pacific Coast Mahogany, *S. humilis*, ranges from Mexico down the Pacific Coast to 9 degrees N in Costa Rica. The two species defy taxonomy and interbreed to form a hybrid. The hybrid grows quicker than either parent species, has intermediate characteristics, and high quality wood (Everett, 1982). Mahogany is never very abundant, even in undisturbed forests, with a density of only one tree per hectare. This, along with the destruction of tropical forests has added to the growing scarcity of Mahogany.

The normal habitat of *S. macrophylla* and *S. humilis* is lowland tropical or subtropical forest, with average annual rainfall totals between 1 and 2.5 meters. If the tree is in tropical moist or wet forests, it will lose its leaves briefly. However, in tropical dry forests, such as Guanacaste, the tree will be leafless for a few months. Mahogany has pinnately-compound leaves composed of 4 to 6, ovate-acuminate leaflets. The leaf is often without a terminal leaflet. The bark has vertical scales, giving it the appearance of Silver Maple or White Oak bark. The flowers are imperfect, with greater numbers of male than female flowers. Each flower is small, yellow-white, and borne in a panicle at the end of the dry season. The fruits of the Mahogany will ripen during January-March in the Guanacaste region of Costa Rica. They are 4 to 6 inch woody capsules which contain up to 40 wind-dispersed seeds, similar to those of an Ash tree. The seeds contain an astringent chemical which significantly lowers the number of animals which feed on them.

Attempts to create plantations of Mahogany have mostly failed because an insect known as the Mahogany Shootborer, *Hypsipyla grandella*, destroys the terminal shoots of the seedlings. According to the lumber industry, this leads to trees with excessive branching and poor form.

*Swietenia mahagoni* and *S. macrophylla* are used in landscaping as shade trees in tropical and subtropical climates. In southern Florida and Hawaii, Mahogany is planted both inland and along the sea, where it is able to withstand some salt spray from the ocean.

The history of the term Mahogany raises a taxonomic controversy. When the Yoruba tribe was brought from Nigeria to Jamaica as slaves, they recognized a tree in Jamaica just like one back home. The American mahogany, *S. mahagoni*, looked identical to the African Mahogany, *Khaya sengalensis*. For this reason the Yorubas referred to American Mahogany as they did African Mahogany, M'Oganwo. Over time the term was changed to M'Ogani by the Yorubas. Americans spelled it how they heard it, and thus M'Ogami became Mahogany. The controversy is that the Yorubas believed African and American Mahogany to be the same tree, but French botanist Adrien de Jussieu (1830) insisted that they were from two different genera. He based this on his African Mahogany specimens having four parted flowers instead of the five parts displayed by American Mahogany.

In March of 1960, a study of American Mahogany was carried out in Mexico. It resulted in enough fruits and flowers with four parts to disprove the myth that American Mahogany is only five parted. This being the only diagnostic difference between African Mahogany, *Khaya* and American Mahogany, *Swietenia*, the classification of *Khaya* needs to be changed back to *Swietenia sengalensis* (Lamb, 1966). The Yoruban insistence on both Mahoganies being the same tree during the 1600's in Jamaica prompted the study in 1960 which verified their belief.

Mahogany bark extracts have been used as astringents for wounds (Lamb, 1966). The dye obtained from steeping *S. mahagoni* bark in water has been applied to wood floors as a stain. The bark is also used occasionally for tanning leather, because the product results in a rich mahogany red color. When cuts are made in the bark, a transparent, yellow, water soluble gum seeps out. This is used as a low quality gum Arabic, and is reported to have healing qualities (Lamb, 1966).

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